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PTO/SB/05 (05-03)

Approved for use through 10/31/2002. OMB 0651-0032

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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<b>UTILITY PATENT APPLICATION TRANSMITTAL</b>  <i>(Only for new nonprovisional applications under 37 C.F.R. 1.53(b))</i>	Attorney Docket No. 8540G-000183 (GP-303087)	
	First Inventor	Robert L. Fuss
	Title	VARIABLE CATALYST LOADING BASED ON FLOW FIELD GEOMETRY
	Express Mail Label No.	EL623599592US

<b>APPLICATION ELEMENTS</b> <i>See MPEP chapter 600 concerning utility patent application contents.</i>	<b>ADDRESS TO:</b> Mail Stop Patent Application Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450
1. <input checked="" type="checkbox"/> Fee Transmittal Form (e.g., PTO/SB/17) <i>(Submit an original and a duplicate for fee processing)</i> 2. <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. 3. <input checked="" type="checkbox"/> Specification [Total Pages <u>32</u> ] <i>(preferred arrangement set forth below)</i> - Descriptive title of the Invention <input checked="" type="checkbox"/> Specification filed in English - Cross References to Related Applications - Statement Regarding Fed sponsored R & D - Reference to sequence listing, a table, or a computer program listing appendix - Background of the Invention - Brief Summary of the Invention - Brief Description of the Drawings (if filed) - Detailed Description - Claim(s) - Abstract of the Disclosure 4. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) [Total Sheets <u>12</u> ] 5. Oath or Declaration [Total Pages <u>3</u> ] a. <input checked="" type="checkbox"/> Newly executed (original or copy) b. <input type="checkbox"/> Copy from a prior application (37 CFR 1.63 (d)) <i>(for a continuation/divisional with Box 18 completed)</i> i. <input type="checkbox"/> <b>DELETION OF INVENTOR(S)</b> Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b). 6. <input checked="" type="checkbox"/> Application Data Sheet. See 37 CFR 1.76	7. <input type="checkbox"/> CD-ROM or CD-R in duplicate, large table or Computer Program ( <i>Appendix</i> ) 8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) a. <input type="checkbox"/> Computer Readable Form (CRF) b. Specification Sequence Listing on: i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or ii. <input type="checkbox"/> paper c. <input type="checkbox"/> Statements verifying identity of above copies <b>ACCOMPANYING APPLICATIONS PARTS</b> 9. <input checked="" type="checkbox"/> Assignment Papers (cover sheet & document(s)) 10. <input type="checkbox"/> 37 C.F.R. §3.73(b) Statement <input type="checkbox"/> Power of Attorney <i>(when there is an assignee)</i> 11. <input type="checkbox"/> English Translation Document (if applicable) 12. <input checked="" type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 <input type="checkbox"/> Copies of IDS Citations 13. <input checked="" type="checkbox"/> Preliminary Amendment 14. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) <i>(Should be specifically itemized)</i> 15. <input type="checkbox"/> Certified Copy of Priority Document(s) <i>(if foreign priority is claimed)</i> 16. <input type="checkbox"/> Request and Non Publication under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent. 17. <input checked="" type="checkbox"/> Other: <u>Petition to Accept Color Drawings</u>

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP)


Prior application information: Examiner \_\_\_\_\_

of prior application No: \_\_\_\_\_ / \_\_\_\_\_

Group / Art Unit: \_\_\_\_\_

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

<b>17. CORRESPONDENCE ADDRESS</b>					
<input checked="" type="checkbox"/> Customer Number or Bar Code Label		<b>27572</b>		or <input type="checkbox"/> Correspondence address below	
<i>(Insert Customer No. or Attach bar code label here)</i>					
Name	Harness, Dickey & Pierce, P.L.C.				
Address	P.O. Box 828				
City	Bloomfield Hills	State	MI	Zip Code	48303
Country	United States of America	Telephone	248-641-1600	Fax	248-641-0270

Name (Print/Type)	Linda M. Deschere	Registration No. (Attorney/Agent)	34,811
Signature			Date <u>3/20/03</u>

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 107700257  
 110303

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**FEE TRANSMITTAL  
for FY 2004**

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$) 1220**Complete if Known**

Application Number 8540G-000183 (GP-303087)

Filing Date

First Named Inventor Robert L. Fuss

Examiner Name

Art Unit

Attorney Docket No. 8540G-000183 (GP-303087)

**METHOD OF PAYMENT (check all that apply)**☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☒ Deposit Account:Deposit  
Account  
Number

07-0960

Deposit  
Account  
Name

General Motors Corporation

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments  
☒ Charge any additional fee(s) during the pendency of this application  
☐ Charge fee(s) indicated below, except for the filing fee  
to the above-identified deposit account.**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	770
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
<b>SUBTOTAL (1)</b>					<b>(\$ 770)</b>

**2. EXTRA CLAIM FEES**

Total Claims	26	-20 **	=	6	X	18	=	108
Independent Claims	5	-3 **	=	2	X	86	=	172
Multiple Dependent					X		=	0

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1202	18	2202	9	Claims in excess of 20	
1201	86	2201	43	Independent claims in excess of 3	
1203	290	2203	145	Multiple dependent claim, if not paid	
1204	86	2204	43	** Reissue independent claims over original patent	
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent	
<b>SUBTOTAL (2)</b>					<b>(\$ 280)</b>

\*\*or number previously paid, if greater; For Reissues, see above

**FEE CALCULATION (continued)****3. ADDITIONAL FEES**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17 (q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	40
1809	770	2809	385	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) Petition to Accept Color Drawings

130

\*Reduced by Basic Filing Fee Paid

**SUBTOTAL (3)**

(\$ 170)

**SUBMITTED BY****Complete (if applicable)**

Name (Print/Type)

Linda M. Deschere

Registration No. Attorney/Agent)

34,811

Telephone

248-641-1600

Signature

Date

3 NOV 03

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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No.: Not yet assigned  
Filing Date: Herewith  
Applicant: Robert L. Fuss et al.  
Group Art Unit: Not yet assigned  
Examiner: Not yet assigned  
Title: VARIABLE CATALYST LOADING BASED ON FLOW  
FIELD GEOMETRY  
Attorney Docket: 8540G-000183 (GP-303087)

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Director of the United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

**PETITION TO ACCEPT COLOR DRAWINGS**

Sir:

The above-referenced invention is directed to a variable catalyst loading based on a flow field geometry for a fuel cell, as well as a method of controlling reactions in a fuel cell. In order to determine the localized areas of the electrode that require a variable catalyst loading based on the bipolar plate material and flow field geometry, the anode and cathode flow field plates of the bipolar plate are electrically separated from one another with an array of resistors between such anode and cathode flow field plates. Then, the distribution of the current leaving an entire fuel cell is determinable by the array of resistors across the entire cross-sectional area of the cell. Given the resistance of each resistor being a known value, the current passing through a

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particular resistor is determined by measuring the voltage drop across such resistor. In this manner, the current produced by a membrane electrode assembly (MEA) is determined as a function of position, by measuring the voltage drops across each resistor in the array. In other words, current as a function of position across the MEA, is monitored.

Examples where the current distribution of an electrode was measured are depicted in Figures 11A and 11B. Hot spots, that is areas of increased electrochemical activity and current density, and cool spots can be seen throughout each of the figures. As seen in the figures, however, there are varying levels of current density throughout the surface of the figures and, in order for one skilled in the art to fully appreciate and acknowledge the effects of the present invention, color drawings are required. As such, in accordance with 37 C.F.R. § 1.84(2), the fee set forth in § 1.17(h); three (3) sets of color drawings; and a black and white photocopy that accurately depicts, to the extent possible, the subject matter shown in the color drawing are submitted herewith.

Favorable consideration of this petition is respectfully requested.

Respectfully submitted,

Date: 3 NOV 03

By:   
Linda M. Deschere  
Reg. No. 34,811

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